

What Is Claimed Is:

1. A process for modifying an application computer program, said application computer program configured in its unmodified form to execute within a first electronic execution environment, said process comprising:

identifying boundaries of a subsection of said application computer program;

modifying said subsection of said application computer program to a form which, when executed within the first electronic execution environment, triggers an invocation of a second electronic execution environment different from said first execution environment; and

incorporating with said application computer program control information enabling execution of the application computer program in the second execution environment.

2. The process of claim 1 wherein a boundary of said subsection is a flow control instruction.

3. The process of claim 1 wherein the first execution environment is a computer operating system and the second execution environment is a debugging environment.

4. The process of claim 3 wherein said step of modifying said subsection of said application computer program includes a step of adding an instruction that causes said operating system to transfer execution control to said debugging environment.

5. The process of claim 1 wherein said step of modifying said subsection of said application computer program includes a step of encrypting at least a portion of said subsection of said application computer program file.

6. The process of claim 5 wherein said step of modifying said subsection of said application computer program further includes a step of relocating at least a portion of said encrypted portion of said subsection to a location distinct from the location of the corresponding unmodified subsection of said application computer program.

7. The process of claim 1 wherein said step of modifying said subsection of said application computer program includes a step of adding functionality for the application computer program to communicate with a remote process not within either the first or second execution environments.

8. The process of claim 7 wherein said remote process is a process that authorizes continued execution of the application computer program.

9. The process of claim 8 wherein said remote process is a cryptographic key management process.
10. The process of claim 7 wherein said application computer program communicates information about execution of said computer application program.
11. The process of claim 10 wherein said information is information about tampering with said computer application program.
12. An apparatus for executing an application computer program, comprised of:
a computer with an operating system;
an application computer program having a non-executable portion in a non-executable form; and
an execution controller providing an execution environment distinct from said operating system, said execution controller being operable to convert the non-executable portion of the application program into a form that can be executed.
13. The apparatus of claim 13 wherein the non-executable portion of the application computer program includes an encrypted portion.
14. The apparatus of claim 13 wherein the application computer program includes a portion capable of communicating with a remote process not within either the operating system or the execution controller.
15. The apparatus of claim 14 wherein the remote process is a process that authorizes continued execution of the application computer program.
16. The apparatus of claim 15 wherein the remote process is a cryptographic key management process.
17. The apparatus of claim 14 wherein the application computer program includes a portion capable of communicating to the remote process information about execution of said computer application program.
18. The apparatus of claim 17 wherein the information about execution of said computer application program is information about tampering with the computer application program.
19. A process for executing a computer application program, comprising the steps of:
launching an operating system;

launching an application computer program, said application computer program having a non-executable portion in a non-executable form;

launching an execution controller, said execution controller providing an execution environment distinct from the operating system and capable of converting the non-executable portion of the application computer program to a form capable of execution; and

executing the application computer program within the execution environment of the execution controller.

20. The process of claim 19, wherein the execution controller launches as a debugger.

21. The process of claim 19, wherein the non-executable portion of the computer application program is in encrypted form.

22. The process of claim 19, wherein the application computer program communicates with a remote process not under either the operating system or the execution controller.

23. The process of claim 22 wherein the remote process is part of a cryptographic key management process.

24. The process of claim 19 wherein the application computer program communicates information to the remote process about execution of the application computer program.

25. The process of claim 24 wherein the information is information about tampering with the application computer program.